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DATE: April 24, 2012

TO: Kelley Chase, EPA Region 3 OSC
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THROUGH:

FROM: Ex. 4 - CBI

SUBJECT: VERIFICATION/COMPLETENESS CHECK – DIMOCK, PA LABORATORY DATA
File NAREL 1100246-ab.pdf
File NAREL 1100248-ab.pdf

## INTRODUCTION

On April 18, 19 and 23, 2012, a review of the case narratives and corresponding certificates of analysis from the U.S> EPA National Air and Radiation Environmental Laboratory (NAREL Reports Posted Mar 15) was conducted at the SERAS facility in accordance with the Follow-Up Verification/Completeness Check agreed upon during our teleconference on Wednesday 2/8/12.

The assumptions for this review include the following: 1) Case narratives from the EPA and Regional labs and/or subcontract labs have been reviewed in accordance with EPA, Regional or Environmental Services Assessment Team (ESAT) protocols and contain all pertinent and complete information to conduct the completeness check. SERAS will base this review on the information provided by the laboratory and not on an actual data package; and 2) SERAS will relay any "red" flags to the EPA R3 personnel to resolve and determine data usability.

## OBSERVATIONS

In accordance with Table 1 – Field and QC Sampling Summary (Rev01 - 2/3/12), Table 2 – Sample Analytical Requirements Summary (Rev01 – 2/3/12), Methods for Groundwater and Surface Water and NAREL AM/SOP-4, Standard Operating Procedure for Gross Alpha and Beta Analysis of Water Samples and the validation guidelines developed by SERAS for radiochemical data (using critical value of 1.65), the following observations were noted and need to be clarified/resolved.

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1. For Gross alpha analysis, the sample result is less than the MDC and the 2σ uncertainty and the 2σ uncertainty multiplied by 1.65 is greater than the MDC. Samples HW45, HW30, HW43, HW15a, FB12, HW38, HW51, HW21, HW23, HW48, HW48z, FB15 and HW16z should be qualified as "UJ" in the result qualifier column in Scribe.
2. For Gross alpha analysis, the absolute value of the sample result is less than the 2σ uncertainty and the uncertainty multiplied by 1.65 is greater than the MDC indicating that the MDC may be reported too low. Samples EB02, FB11, HW31, HW31z and FB13 should be qualified "UJ" in the result qualifier column in Scribe.
3. For Gross alpha analysis, the sample result is greater than the MDC but less than the 2σ uncertainty. Sample HW16 should be qualified "UJ" in the result qualifier column in Scribe.
4. For beta analysis, the sample result is less than the MDC but greater than or equal to the 2σ uncertainty. Samples EB02, HW45, HW15a, HW31z, HW21, HW48z and HW16 should be qualified "UJ" in the result qualifier column in Scribe.

5. For beta analysis, the sample result is less than the MDC and the 2σ uncertainty and the 2σ uncertainty multiplied by 1.65 is greater than the MDC. Samples FB11, HW47, FB12, FB13, HW51 and FB15 should be qualified as "UJ" in the result qualifier column in Scribe.
6. A field blank (FB15) was used for the matrix spike. Typically the use of QC samples for spikes are not recommended. The method blank, LCS and duplicate samples were within the Z score specified by the laboratory. No additional qualifications are required.
7. It is assumed that all required instrument/system criteria were met by the laboratory or had no impact on the data.
8. No qualifiers are to be added to sample HW47 for alpha analysis or to samples HW30, HW31, HW43, HW38, HW23, HW48 and HW16z for beta analysis.

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1. For Gross alpha analysis, the sample result is less than the MDC and the 2σ uncertainty and the 2σ uncertainty multiplied by 1.65 is greater than the MDC. Samples FB14, HW21z, HW44, HW36n, HW54, FB16, HW27, FB17, HW03z, HW58, HW11, HW27z, HW53 and HW59 should be qualified as "UJ" in the result qualifier column in Scribe.
2. For Gross alpha analysis, the sample result is greater than the MDC but less than the 2σ uncertainty. Sample HW03 should be qualified "UJ" in the result qualifier column in Scribe.
3. For beta analysis, the absolute value of the sample result is less than the 2σ uncertainty and the uncertainty multiplied by 1.65 is greater than the MDC indicating that the MDC may be reported too low. Samples FB14 and FB16 should be qualified "UJ" in the result qualifier column in Scribe.
4. For beta analysis, the sample result is less than the MDC but greater than the 2σ uncertainty. Samples FB17, HW03, HW11 and HW53 should be qualified "UJ" in the result qualifier column in Scribe.
5. For beta analysis, the sample result is less than the MDC and the 2σ uncertainty and the 2σ uncertainty multiplied by 1.65 is greater than the MDC. Samples HW21z and HW36n should be qualified as "UJ" in the result qualifier column in Scribe.
6. A field blank (FB16) was used for the matrix spike. Typically the use of QC samples for spikes are not recommended. The method blank, LCS and duplicate samples were within the Z score specified by the laboratory. No additional qualifications are required.
7. It is assumed that all required instrument/system criteria were met by the laboratory or had no impact on the data.
8. No qualifiers are to be added to samples HW49, HW22, HW55, HW57 and HW07 for alpha analysis or to samples HW49, HW22, HW44, HW54, HW55, HW27, HW57, HW03z, HW58, HW27z, HW59 and HW07 for beta analysis.

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